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10/606,929

06/26/2003

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EXAMINER

ALLEN, ANDRE J

ART UNIT

PAPER NUMBER

2855

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                      |  |
|------------------------------|--------------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/606,929 | <b>Applicant(s)</b><br>SEIDEL ET AL. |  |
|                              | <b>Examiner</b><br>Andre J. Allen    | <b>Art Unit</b><br>2855              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on app. as filed 6-26-03.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>6-26-03</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 5 is objected to because of the following informalities: It appears that the word "scope" is intended to be scoop. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1,6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagen in view of Cronin et al.

Regarding claim 1 Hagen teaches a multi-function air data sensor probe 14ra- 14rc, 16la-lc for sensing a plurality of air data parameters (col. 1 lines 32-68) comprising a strut (col. 3 lines 5-8) that extends from the skin of an aircraft (col. 3 lines 23-30), a pitot pressure sensing port (col. 3 line 42 lines 1-10)) at an outer end of said strut, a total air temperature sensor (col. 4 lines 60-68) in said strut and at least one static pressure sensing port 32 on said strut. Hagen does not teach a rotatably mounted angle of attack sensing vane mounted on the strut for rotation about an axis generally perpendicular to the skin of the aircraft on which the strut is mounted, and extending outwardly from an outer end of said strut, the vane moving about the axis to indicate relative air flow direction past the strut Cronin teaches a rotatably mounted angle of attack sensing vane mounted on the strut for rotation about an axis generally perpendicular to the skin of the aircraft on which the strut is mounted, and extending outwardly from an outer end of said strut, the vane moving about the axis to indicate relative air flow direction past the strut (col. 5 lines 24-40)(col. 6 lines 5-10)(claim12). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hagen with a movable vane as taught by Cronin for the purpose of measuring a side slip and angle of attack with respect to flight parameters that are analyzed within flight systems ((col. 5 lines 24-40)(col. 6 lines 5-10)(claim12)).

Regarding claim 6 Hagen does not explicitly teach a generally airfoil shape cross-section. However, lacking any criticality it would have been obvious to a person having ordinary skill in the art of air data sensors at the time the invention

was made to manipulate the shape of a cross-section to the most optimal shape with respect to the availability of shapes to the user after undo –experimentation for the purpose of creating an data sensing unit that operates at maximum efficiency.

Regarding claim 8 Hagen teaches upper and lower lateral sides, the at least one static sensing port comprising a first static pressure sensing port 32 on the upper lateral side of the struts, and a second static sensing port 24 on the lower lateral side of the strut, and a separate pressure sensor 30 coupled to the respective first and second static sensing ports.

3. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagen in view of Cronin as applied to claims 1,6 and 8-3 above, and further in view of Peterson et al.

Regarding claim 2 Hagen in view of Cronin does not explicitly teach static pressure sensing port is positioned on a lateral side of the strut, and is in fluid communication with a passageway on the interior of the strut, a pressure sensor in fluid communication with the passageway for measuring the pressure in the passageway. Peterson teaches a static pressure sensing port positioned on a lateral side of the strut, and is in fluid communication with a passageway on the interior of the strut, a pressure sensor in fluid communication with the passageway for measuring the pressure in the passageway (fig. 1) 21 22 (col. 1 lines 43-65). It would have been obvious to one having ordinary skill in the art at

the time the invention was made to modify the air data sensors taught by Hagen in view of Cronin with a lateral positioning of the port onto a strut in communication with a passage for the purpose of aligning or coupling two elements together to align with one another allowing for a fluid communication between ports.

Regarding claim 3 Hagen in view of Cronin does not explicitly teach the strut has a base end for mounting on an aircraft, and a self-contained instrumentation package mounted at the base end for installation as a unit with the strut onto an aircraft with the instrument package on an interior of such aircraft. Peterson teaches the strut has a base end for mounting on an aircraft, and a self-contained instrumentation package mounted at the base end for installation as a unit with the strut onto an aircraft with the instrument package on an interior of such aircraft (col. 2 lines 50-60). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hagen in view of Cronin with a self-contained instrument panel as taught by Peterson et al for the purpose of providing information to the operator of an aircraft regarding its flight parameters.

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hagen in view of Cronin as applied to claims 1,6 and 8 above, and further in view of LeBlond et al.

Regarding claim 4 Hagen in view of Cronin as modified by Peterson teaches a base end 12 that mounts on the skin of an aircraft (Peterson col. 2 lines 50-55)(Peterson col. 3 lines 13-34), does not explicitly teach sensing vane being mounted on a shaft supported on the strut with the shaft rotation about the axis, and an angle resolve connected to the shaft for determining changes in angle of the shaft as air flow past the strut changes the relative position of the sensing vane. LeBlond teaches the sensing vane 1 being mounted on a shaft 8 supported on the strut with the shaft rotation about the axis, and an angle resolve connected to the shaft for determining changes in angle of the shaft as air flow past the strut changes the relative position of the sensing vane (col. 2 lines 50-55). It would have been obvious to one having ordinary skill in the art of devices that monitoring air data parameters at the time the invention was made to modify the devices taught by Hagen as modified by Cronin to include a shaft and a device to measure the position of the vane as taught by LeBlond for the purpose of eliminating errors in mechanical measurement of the angle of incidence (LeBlond Col. 1 lines 28-30)

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hagen in view of Cronin as applied to claims 1,6 and 8 above, and further in view of Kromer et al.

Regarding claim 7 Hagen in view of Cronin as modified by Peterson does not teach heaters mounted in the strut along at a least a leading edge thereof that faces an upstream direction relative to the airflow. Kromer teaches heaters

28 mounted in the strut 25 along at a least a leading edge thereof that faces an upstream direction relative to the airflow. Therefore, It would have been obvious to one having ordinary skill in the art of devices that monitoring air data parameters at the time the invention was made to modify the devices taught by Hagen as modified by to include heaters mounted in the strut as taught by Kromer et al for the purpose of insuring that the probes does not ice up when the aircraft is on the ground (Kromer col. 3 lines 8-10).

***Allowable Subject Matter***

5. Claims 9-16 is allowed.

Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The cited prior art does not disclose nor suggest an air scoop or a forwardly facing air scope, a wall surface defining portions of the scoop and flow duct and over which the air flows, and a plurality of openings in the wall surface to remove boundary layer, air as the flow passes into the flow duct.

***Conclusion***




Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre J. Allen whose telephone number is 571-272-2174. The examiner can normally be reached on mon-fri 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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